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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,745	07/21/2000	KARL AMUNDSON	INK-086-(2108/66)	4716

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EXAMINER	
NGUYEN, JIMMY H	
ART UNIT	PAPER NUMBER
2673	

DATE MAILED: 01/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/621,745	AMUNDSON ET AL.
	Examiner	Art Unit
	Jimmy H. Nguyen	2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,15,16 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-12,15,16 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on *13 November 2002* is: a)☒ approved b)☐ disapproved by the Examiner

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This Office Action is made in response to applicant's amendment filed on 11/13/2002 (entered into the file wrapper as Paper No. 6). The objections to the drawing, the claimed objection to claim 1 and 20, and the rejections under 35 USC 112, first and second paragraphs, are overcome by the amendment, and hereby withdrawn. Claims 1, 3-12, 15, 16 and 18 are currently pending in the application. An action follows below:

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 07/26/2001 and entered as paper No. 3 is considered by the examiner. However, two references B45 and C23 cited in this IDS are crossed out because they were already cited in the IDS filed on 02/05/2001 and considered by examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3-12, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oversluizen et al (USPN: 6,100,951), hereinafter Oversluizen, and further in view of Jacobson et al (USPN: 5,961,804, cited in IDS filed on 07/26/01), hereinafter Jacobson.

As per claims 1 and 18, Oversluizen discloses an electronic display (a TFT-based active matrix display device, col. 8, line 5) comprising a display medium (a display medium 10, see fig. 3 or 16, col. 5, lines 31-33), a transistor (a TFT, see fig. 21, col. 8, lines 36-39) including a data

line (a source electrode 56, col. 8, lines 34-35), a gate electrode (a gate electrode 57, col. 9, line 37), a pixel electrode (a picture electrode 18, col. 8, line 34) and a layer of insulating material (a layer of insulating material 62, col. 9, line 30) situated between a first layer of conductive material (17,57) and a second layer of conductive material (16, 18, 18a, 56, 58, 66) (see col. 8, lines 32-36); and a storage capacitor (Cs) (see fig. 21, col. 9, lines 30-33) including a layer of insulating material (a layer of insulating material 62, see col. 9, line 30) situated between a first layer of conductive material (17,57) and a second layer of conductive material (16, 18, 18a, 56, 58, 66) (see col. 8, lines 32-36). Further, the storage capacitor inherently causes an increase of the voltage decay time, thereby reducing a rate of voltage decay across the pixel (since the voltage decay time is proportionally increased with the total pixel capacitance, which has a value equal to the sum of an inherent capacitance between the pixel electrode (18) and the counter electrode (i.e., the common picture electrode, see col. 9, line 50) and the capacitance of the storage capacitor. Oversluizen further teaches that the display medium (10) may be a liquid crystal display medium or an electrophoretic display medium (col. 5, lines 31-33). Accordingly, the difference between the claimed invention as specified in claims above and the Oversluizen reference is that Oversuizen does not disclose expressly the display medium comprising at least one capsule containing a plurality of electrophoretic particles dispersed in a fluid medium.

However, Jacobson discloses expressly an electrophoretic display medium comprising at least one capsule (microcapsule 320) containing a plurality of electrophoretic particles (microparticles 330) dispersed in a fluid medium (dyed fluid 340) (see fig. 3a, col. 8, lines 49-61). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to substitute Jacobson's electrophoretic display medium for the display

medium of Oversluizen because the benefits of using electrophoretic display medium are to reduce the power consumption due to the stability of the electrophoretic display and to provide a high contrast of the display, as taught by Jacobson (see Jacobson, col. 1, lines 10-61, and col. 2, lines 19-24).

Regarding to claims 3 and 12, Oversluizen further discloses that the layer of insulating material of the transistor and the layer of insulating material of the storage capacitor are the same continuous layer of insulating material (62) (see fig. 21).

Regarding to claim 4, Oversluizen discloses the transistor and the storage capacitor each further comprising a layer of semiconducting material (42') (see fig. 21, col. 8, line 58).

Regarding to claim 5, due to the similarity of this claim to a combination of claims 3 and 4 above, this claim is therefore rejected for the same reason as set forth in claims 3 and 4.

Regarding to claim 6, Oversluizen further discloses that the layer of semiconducting material (42') is unpatterned (see fig. 21).

Regarding to claims 7 and 8, Oversluizen further discloses that the storage capacitor is in electrical communication with a neighbouring gate electrode (57) (i.e., the claimed second gate line of claim 7 or the claimed conductor of claim 8).

Regarding to claim 9, Oversluizen further discloses that the second layer (16, 18, 18a, 56, 58, 66) of conductive material of the storage capacitor forms a storage capacitor pixel electrode (18a) and the first layer (17, 57) of conductive material of the storage capacitor forms a storage capacitor gate electrode (57) (see fig. 21).

Regarding to claim 10, Oversluizen further discloses that the layer of insulating material of the storage capacitor is patterned (col. 3, lines 34-40).

Regarding to claim 11, Oversluizen further discloses that the layer (62) of insulating material of the storage capacitor is unpatterned (see fig. 21).

Regarding to claim 16, Oversluizen further discloses that an inherent capacitance (C) of the pixel (see discussed in claim 1 above) and an inherent resistance (R) of the pixel exist (col. 10, lines 1-11). Accordingly, one skilled in the art at the time of the invention was made would recognize that, in the presence of the storage capacitor (Cs), the voltage decay time across the pixel is based on the product of R and (C + Cs) (since C and Cs are parallel in connection).

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oversluizen in view of Jacobson as applied to claim 1 above, and further in view of Hopper et al (the C1 reference cited in IDS filed on 02/05/2001), hereinafter Hopper.

As per claim above, as discussed in claim 1 above, Oversluizen discloses an inherent capacitor per pixel and the storage capacitor, but fails to disclose the capacitance of the storage capacitor is greater than the capacitance of a pixel comprising a portion of the display medium. Accordingly, the difference between the claimed invention as specified in claim 15 above and Oversluizen in view of Jacobson is that the capacitance of the storage capacitor is greater than the capacitance of a pixel comprising a portion of the display medium.

However, Hopper discloses expressly the capacitance of the storage capacitor (1.5 pF) is greater than the capacitance of a pixel (0.055 pF), so as to minimize the addressing time of the system, thereby improving the quality of an image displaying on a large display device (see page 1148, abstract, and page 1151, second column). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Hopper's teaching, i.e., the capacitance of the storage capacitor greater than the capacitance of a pixel, in the display of

Oversluizen in view of Jacobson because this would improve the quality of an image displaying on a large display device, as taught by Hopper (see page 1148, abstract, and page 1151, second column).

Response to Arguments

6. Applicant's arguments with respect to independent claims 1 and 18 have been considered but are moot in view of the new ground(s) of rejection.

7. In response to applicants' argument that the reference fails to show certain features of applicants' invention, it is noted that the features upon which applicants state "a display medium comprising at least one capsule containing a plurality of electrophoretic particles dispersed in a fluid medium", is not recited in the rejected original claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. Please see the new ground(s) of rejection above.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is (703) 306-5422. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at (703) 305-4938.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

JHN
January 20, 2003

BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600